

ABSTRACT OF THE DISCLOSURE

In a manufacturing technology for forming a thin film transistor comprising a laser irradiation step, objects of the present invention are to obtain a high performance and multifunction semiconductor manufacturing apparatus and thin film transistor manufacturing method. A silicon thin film 2001 is formed on a glass substrate 202, and laser 203 is irradiated onto this thin film 201 whereby a re-crystallization film is obtained. This re-crystallization film undergoes a hydrogen plasma processing so that dangling-bonds of silicon are terminated. Moreover, a step for forming a silicon dioxide film 205 on the re-crystallization film is included. These steps are performed under the conditions that the glass substrate 202 is not exposed to the air and a processing temperature is 350°C or less.